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Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2019-10-01-05

Date: 28-09-19

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road, Yelahanka, Bangalore-560064

Customer's Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 25-09-19

Sample Type : Fine Aggregate(M Sand)

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 25-09-19

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	28	28	2.8	97.2	90-100	90-100	90-100	95-100
3	2.36 mm	55	83	8.3	91.7	60-95	75-100	85-100	95-100
4	1.18 mm	239	322	32.2	67.8	30-70	55-90	75-100	90-100
5	600 micron	205	527	52.7	47.3	15-34	35-59	60-79	80-100
6	300 micron	203	730	73.0	27.0	5-20	8-30	12-40	15-50
7	150 micron	190	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2019-10-01-05** **Date: 28-09-19**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.6	–
2	Specific Gravity	2.59	–
3	Material finer than 75 micron(%)	6.8	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2019-10-01-05 **Date: 23-09-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 20-09-19

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 20-09-19

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	314	314	2.9	97.1	95-100
22.4	2255	2569	23.4	76.6	60-80
11.2	2178	4747	43.2	56.8	40-60
4.75	2251	6998	63.6	36.4	25-40
2.36	1628	8626	78.4	21.6	15-30
0.6	629	9255	84.1	15.9	8-22
0.075	1322	10577	96.2	3.8	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID : **CP-RW-2019-10-01-05** **Date: 23-09-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 20-09-19

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of test : 20-09-19

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.4	300.4
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.8	74.4
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.6
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.7	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.8
6	Aggregate impact value (Mean of two tests)	Pecentage	24.7	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2019-10-01-05** **Date: 23-09-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	20-09-19
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	20-09-19

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.6%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.3%	
Combined Flakiness and Elongation Index for WMM	24.9%	

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TEST REPORT ON BITUMEN

Lab ID	:	CP-RW-2019-10-01-05
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer's Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	24-09-19
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	24-09-19

Date: 25-09-19

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	64	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	99	Min. 75cm
4	Flash point, °C	246	Min. 220°C
	Fire point, °C	274	

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TEST RESULTS OF GRADATION FOR OPEN GRADED PREMIX CARPET

Lab ID : CP-RW-2019-10-01-05 Date: 28-09-19

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 26-09-19

Type of Mix : Open Graded Premix Carpet

Date of test : 26-09-19

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
22.4	0	0	0.0	100.0	100
13.2	0	0	0.0	100.0	100
9.5	417	417	8.3	91.7	90-100
4.75	2180	2597	51.9	48.1	35-51
2.36	1035	3632	72.6	27.4	24-39
1.18	523	4155	83.1	16.9	15-30
0.3	389	4544	90.9	9.1	9-19
0.075	161	4705	94.1	5.9	3-8
PAN	295	5000	100.0	0.0	0

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR PREMIX CARPET

Lab ID : **CP-RW-2019-10-01-05** **Date: 01-10-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 26-09-19

Type of Mix : Open Graded Premix Carpet

Date of test : 26-09-19

Physical Requirements fo Coarse Aggregate for Premix Carpet

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.4	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	9.3		
Strength	Aggregate Impact Value	21.8	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.56	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.35	Maximum 2%	IS:2386 Part III

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Date: 01-10-19

Lab ID	:	CP-RW-2019-10-01-05
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	26-09-19
Type of Mix	:	Open Graded Premix Carpet
Date of test	:	26-09-19
Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.7	Minimum Retained Coating 95%
2	99.5	0.5		
3	98.5	1.5		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2019-10-01-05** **Date: 01-10-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Akashvani Layout, Andhra Layout and Prakruthi Layout in Ward No:3 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	26-09-19
Type of Mix	:	Open Graded Premix Carpet
Date of test	:	26-09-19

The results of the tests conducted on the Premix Carpet sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	10.58	10.57	8.2KN(min)
2	Marshal flow at 60°C, mm	3.23	3.27	2-4
3	Percent air Voids	4.51	4.29	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.81	13.9	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.3	69.2	65-75
6	Density, g/cc	2.22	2.26	–

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